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STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

LANSING



REBECCA A. HUMPHRIES
DIRECTOR

October 30, 2008

The Honorable Michelle McManus, Chair
Senate Appropriations Subcommittee
on Natural Resources
S-2 Capitol Building
P.O. Box 30036
Lansing, Michigan 48909-7536

The Honorable Michael Lahti, Chair
House Appropriations Subcommittee
on Natural Resources
S-1489 House Office Building
P.O. Box 30014
Lansing, Michigan 48909-7514

Dear Senator McManus and Representative Lahti:

Pursuant to Section 502, PA 122 of 2007, a report of the Department of Natural Resources' (DNR) bovine tuberculosis eradication efforts, during the fourth quarter of Fiscal Year 2007-08, is attached.

If you have any questions, please feel free to contact me.

Sincerely,

Sharon M. Schafer, Chief
Budget and Support Services
517-335-3276

Attachment

cc: Senate Appropriations Subcommittee Members
House Appropriations Subcommittee Members
Ms. Jessica Runnels, Senate Fiscal Agency
Dr. Kirk Lindquist, House Fiscal Agency
Mr. Robert Emerson, State Budget Director, Department of
Management and Budget (DMB)
Mr. Jacques McNeely, DMB
Ms. Jennifer Harrison, DMB
Director Rebecca Humphries, DNR
Ms. Arminda Koch, Resource Management Deputy, DNR
Mr. Rodney Stokes, Chief of Staff, DNR
Mr. Daniel Eichinger, Legislative Liaison, DNR
Dr. Russ Mason, DNR
Mr. Gary Hagler, DNR
Mr. Jason Crandall

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**Department of Natural Resources (DNR)
Bovine Tuberculosis Program
Fiscal Year 2007- 08 Fourth Quarter Summary
July 1, 2008 – September 30, 2008**

Source: Wildlife Health Section

Disease Surveillance in Wildlife

During the quarter, surveillance activities for bovine tuberculosis (TB) continued statewide. Deer samples voluntarily submitted by hunters have been received from the early firearm season (Sep. 18-22), youth and disabled veteran hunt (Sep. 27-28), special disabled firearm hunt (Oct. 16-19), archery season (Oct. 1 - Nov. 14), and from the mandatory submission of deer samples from the early antlerless hunt on private land that took place in the Chronic Wasting Disease (CWD) surveillance zone (Sep. 18-22). Elk samples have also been received from the September elk hunt. Many DNR personnel are spending time working the deer and elk check stations collecting samples for bovine TB testing. Deer also continue to be submitted for testing from Disease Control Permits and as road-killed. The DNR Wildlife Disease Lab (WDL) tested 1,126 white-tailed deer, 65 elk, and two moose for bovine TB in the most recent quarter. Lab results for samples collected from the 2008 hunting season will be released in the spring of 2009.

Table: Number of wild white-tailed deer TB tested by county, Jul. 1 - Sep. 30.

County	Total Tested		
Alcona	28	Kalamazoo	12
Allegan	36	Kent	285
Alpena	41	Lake	1
Antrim	75	Lenawee	16
Barry	30	Livingston	11
Berrien	7	Macomb	3
Branch	12	Mecosta	1
Calhoun	2	Montcalm	38
Cass	27	Montmorency	19
Charlevoix	23	Muskegon	5
Cheboygan	2	Newaygo	2
Clinton	14	Oakland	6
Crawford	1	Ogemaw	18
Eaton	12	Osceola	1
Emmet	2	Oscoda	21
Genesee	7	Otsego	3
Grand Traverse	4	Ottawa	18
Gratiot	7	Presque Isle	23
Hillsdale	24	Roscommon	4
Huron	1	Saginaw	1
Ingham	29	Sanilac	2
Ionia	30	Shiawassee	93
Iosco	39	St. Joseph	2
Jackson	47	Tuscola	2
		Van Buren	7

Note: An additional 17 deer were TB tested and not identified by location.

Disease Control Permit (DCP) Program

Background Information

- An amendment was made to Section 5.7 of the Wildlife Conservation Order by the Natural Resources Commission in November 2007 to extend the DCP program to any private landowner who owns property 1) in a county where TB is found in any species, or 2) within a 30-mile radius of a location where TB is found in any species.
- In particular, participation in the DCP program is being offered to private landowners in Deer Management Unit (DMU) 452. Consequently, a letter was sent to many hunt clubs and larger landowners in DMU 452 in December of 2007 to inform them about this additional opportunity to harvest deer.
- DCPs have been available for several years on a request basis, but some cattle producers have expressed difficulty in getting the permits in a timely manner when needed.
- In early January 2008, the WDL mailed out DCPs to all cattle producers in Alcona, Alpena, Montmorency, Oscoda and Presque Isle Counties with more than six head of cattle.
 - This initiative was designed to make it simpler for cattle producers in areas where TB is established to control deer numbers on their farms. Use of the DCPs may help reduce the risk of transmission of TB from free-ranging deer to cattle.
 - Each producer was initially mailed five kill tags, with more available upon request when the original five were filled. DCPs are valid for a year and may be used year-round.
 - Current plans are to make the DCPs available in this manner for three years and then evaluate the effectiveness of the program.
- Due to the recent finding of a TB-positive wild deer in Shiawassee County, letters explaining the program were mailed to Shiawassee and Clinton Counties' cattle producers located within a ten-mile radius of where the TB-positive deer was located.
- The distribution of all DCPs is being coordinated by the WDL. A dedicated phone number (517) 336-5054 and e-mail address (DEPARTMENT-DCP@michigan.gov) have been established and are monitored during normal business hours.

**See Disease Control Permit report dated Oct. 7, 2008 in Appendix A for submission numbers and lab results.

Regulation Enforcement Activities

Training:

Conservation Officers from the Gaylord and Roscommon Districts (which encompass all counties in the TB Core Zone) attended training on September 10, 2008. This training

was to provide the officers with the most current information regarding Michigan's Bovine Tuberculosis Eradication Project.

Dr. Dan O'Brien of Wildlife Division gave a presentation that included information on transmission, prevalence, and the likelihood that, as we get closer to eradication, the work and enforcement may take more effort.

Mr. Brent Rudolph of Wildlife Division also gave a presentation regarding research he is doing regarding public attitudes toward baiting and feeding and factors that influence their decisions with baiting and feeding regulations.

Lt. Creig Grey of the Roscommon District attended the annual Bovine TB Conference held in East Lansing on July 23 & 24, 2008. The conference was very informative - especially hearing what is going on in other areas of the world to control and eradicate the disease.

Group Patrols:

Conservation Officers from both the Gaylord and Roscommon Districts conducted high visibility patrols in the seven TB counties the last ten days of September. The objective was to allow the public to see Conservation Officers in the time period just prior to the bow opener focusing on baiting and feeding violations and, more importantly, educating the public in the regulations and the reasons for the regulations. This, on the heels of the baiting and feeding ban in the Lower Peninsula, generated a lot of public questions and comments.

Baiting Complaints:

Fifty-three in TB Core Zone (source is Report All Poaching complaints and biweekly reporting). Complaints are currently up and are three times as many as the same period last year. This is due to the public awareness of the baiting and feeding ban in the Lower Peninsula. About fifty percent of the complaints in the Gaylord and Roscommon Districts in September were baiting- and feeding-related.

Bait Tickets Issued:

Forty-one tickets issued in TB Core Zone.

Aircraft Support:

Department aircraft was utilized on three occasions to provide detection of baiting and feeding violations, as well as photographic documentation of the violations.

Research Activities – Proposals Under Development

Title: Evaluating Acceptance of Free-Ranging White-Tailed Deer Bovine Tuberculosis Management Strategies – Primary Investigator: Brent Rudolph, Big Game Specialist, Department of Natural Resources

Managers have identified the need to develop publicly-acceptable control policies to maintain or improve efforts to eradicate an infection of bovine TB from white-tailed deer (WTD) in Michigan. A better understanding of factors influencing hunter

compliance with baiting regulations and decisions to harvest deer was identified as a critical knowledge gap which challenges efforts to maintain and enhance TB control strategies. Research collaboration between the Department and Michigan State University (MSU) was initiated to examine these factors. The Michigan Department of Agriculture (MDA) will provide funding support to gain initial insights for this evaluation and will provide a point of contact to the Department who will be responsible for coordinating communications related to this portion of the project. The Department and MSU will conduct one or more workshops and meetings with wildlife managers, law enforcement personnel, agriculture and recreation industry professionals, and small groups of stakeholders, to gather data as part of this assessment. Modeling efforts will also be conducted to characterize the degree to which past modifications to deer hunting regulations have influenced harvest levels, while controlling for factors that influence hunting access and deer distribution, such as habitat, land ownership, and development patterns. This effort represents a unique and exciting multi-agency and university collaboration to engage the public in order to understand factors limiting the support for and effectiveness of TB management strategies.

A final project proposal has been submitted to the MDA and the Department. MDA and the Department developed a draft Memorandum of Understanding (MOU) in which MDA will provide funding in support of the first year of this research and a point of contact for coordinating communications related to the assessment. The Department will collaborate with MSU in conducting the research, completing reports, and disseminating results. A contract between the Department and MSU has also been developed to run from July 1, 2008 through September 30, 2010 to carry out portions of the research.

On May 19, a presentation titled "A review of criminological theory to identify strategies to enhance bovine tuberculosis eradication efforts in Michigan" was accepted to be delivered at the 15th Annual Conference of The Wildlife Society this November. The presentation will provide background and review preliminary results of a portion of this research.

Title: Bovine Tuberculosis Spatial Model for White-tailed Deer – Primary Investigator: Dr. Dan O'Brien, Wildlife Veterinarian, Department of Natural Resources

The modeling approach is an adaptation to Michigan WTD of a spatially-explicit, stochastic model developed for TB in New Zealand brushtail possums. Iteratively applying this model over time, the dynamics of WTD and the expansion or control of TB can be predicted. The model constructs a true spatially-explicit framework rather than applying a non-spatial model to a lattice of cells representing contiguous geographic areas. The result is a continuous time/continuous space model that uses density surfaces to describe both host population density and TB transmission risk. By allowing these to vary continuously across the landscape, their values can be estimated at any point on the geographic and time surface.

As of February 2008, a preliminary prototype of the model had been completed. Discussions between the principal investigators in March 2008 yielded an approach to make the model more specific to Michigan TB management issues. Initial training will be offered and the final prototype evaluated, with a completed working model anticipated by the close of 2008.

MEETINGS ATTENDED

Annual Bovine Tuberculosis Conference, East Lansing, MI

This conference was hosted by the MDA and DNR on July 23 & 24. Several DNR personnel were in attendance. Scheduled talks included:

- Updates of bovine TB control and eradication efforts in New Zealand, Minnesota, and Riding Mountain (Canadian) National Park
- Models of wildlife bovine TB transmission among opossums in New Zealand and exposure assessment of interactions between beef cattle and deer in Minnesota
- Michigan wildlife risk mitigation update
- Michigan feeding and baiting compliance
- Bovine TB research compilation
- Results of a stakeholder acceptance study

Meetings and other activities of Brent Rudolph, Department of Natural Resources Big Game Specialist:

- 7/22/08: TB Spatial Model Review: Met with Dave Ramsey, Graham Hickling, Dan O'Brien, and Rique Campa to provide feedback
- 7/24/08: Bovine TB Conference: Delivered presentation, "Stakeholder Acceptance: Criminological Theory, Compliance, and Cooperation"
- 7/25/08: Michigan State University (MSU) and University of Minnesota TB Research Coordination Meeting: Participated in a meeting with personnel from both universities to discuss potential collaborative research topics
- 7/25/08: Planning meeting to discuss appropriate research methodologies with MSU's Criminal Justice faculty member
- 9/10/08: Law Enforcement Division District 3 and 5 Staff Meeting: Delivered presentation, "Stakeholder Acceptance, Compliance, and Cooperation with TB Eradication"
- 9/11/08: MSU Conservation Criminology Meeting: Attended a meeting of MSU Fisheries and Wildlife and Criminal Justice faculty and graduate students to discuss the potential of research collaboration on topics of interest to both programs

Meetings and other activities of Dr. Steve Schmitt, Department of Natural Resources Wildlife Veterinarian, Wildlife Health Section Supervisor:

- 7/1/08: TB Advisory Committee meeting
- 7/7/08: Captive Cervid Update and Legislative Strategy
- 7/8/08: MDA-DNR Discussion - Bovine TB Program
- 7/17/08: National Fish and Wildlife Health Initiative (NFWHI) Steering Committee
- 7/23/08 – 7/24/08: Michigan Bovine TB Conference
- 7/28/08: Legislative Priorities Related to Disease
- 8/4/08 – 8/8/08: National Wildlife Services Advisory Committee, Riverdale, Maryland
- 8/13/08: Monthly Wildlife Health Meeting

- 8/21/08: Toolkit for NFWHI Steering Committee
- 8/22/08: Captive Cervid Issue
- 9/3/08: USDA TB Review Response Meeting
- 9/4/08: TB Vaccine Conference Call
- 9/10/08: TB Talk to Conservation Officers

Meetings and other activities of Dr. Dan O'Brien, Department of Natural Resources Wildlife Veterinarian:

- 7/1/08: TB Scientific Advisory Committee meeting
- 7/7/08: DNR TB Legislative Strategy meeting
- 7/15/08: TB Review Response Conference Call
- 7/23/08 – 7/24/08: Michigan TB Conference
- 7/22/08 – 7/31/08: Research collaboration visit with Dr. Dave Ramsey, Arthur Rylah Environmental Research Institute, on TB white-tailed deer spatial model
- 8/6/08: Research Collaboration meeting with Dr. Shawn Riley, MSU Department of Fisheries and Wildlife
- 9/4/08: TB Vaccination Research Collaboration Conference Call
- 9/10/08: Training session for Conservation Officers on TB
- 9/22/08: Invited keynote lecture on TB for National Conference of Agricultural Experiment Station Directors

Meetings and other activities of Elaine Carlson, Department of Natural Resources Biologist, Mio, MI:

- Attended some Wildlife risk mitigation meetings with MDA
- Worked at a deer check station in September

APPENDIX A

DISEASE CONTROL PERMIT PROGRAM MONTHLY UPDATE October 7, 2008

BOVINE TUBERCULOSIS

Permits for Livestock Producers

DCPs have been available for several years on a request basis but some cattle producers have expressed difficulty in getting the permits in a timely manner when needed. This initiative was designed to make it simpler for cattle producers in areas where bovine TB is established to control deer numbers on their farms. Use of the DCPs may help reduce the risk of transmission of TB from free-ranging deer to cattle. Current plans are to make the DCPs available in this manner for three years, then evaluate the effectiveness of the program.

In Northeastern Michigan, the Five-County TB Area

In early January 2008, the WDL mailed out DCPs to all cattle producers in Alcona, Alpena, Montmorency, Oscoda, and Presque Isle Counties with more than six head. Each producer was initially mailed five kill tags; more available upon request when the original five are filled. The permits are valid for a year, and may be used year-round.

- 277 deer have been taken by 62 livestock producers.
- 658 permits and 3,505 permit tags have been mailed.
- 191 signed permits have been received.
- 19 producers have requested more tags.
- 26 have indicated that they do not wish to participate, have returned permit and tags.

In Northeastern Michigan, Outside the Five-County Area (including Iosco)

County	Permit Holders	Number of Permit Tags Issued
Antrim	6	85
Charlevoix	4	38
Cheboygan	3	25
Emmet	4	26
Iosco	12	80
Ogemaw	4	22
Otsego	1	10
TOTALS	34	286

In Shiawassee County

Due to finding of a TB-positive wild deer in Shiawassee County in the fall of 2007, letters explaining the program were mailed to Shiawassee and Clinton County cattle producers located in a ten-mile radius around the positive deer.

- 37 deer have been taken by 11 livestock producers.
- 150 letters of invitation were mailed.
- 54 permits and 300 tags have been mailed.
- 28 signed permits have been received.
- Three producers have requested more tags.

Permits for Private Landowners (non-agricultural) in DMU 452

Following changes to Section 5.7 of the Wildlife Conservation Order by the Natural Resources Commission in November 2007, private landowners, other than cattle producers, may be issued DCPs if they own property, 1) in a county where TB is found in any species, or 2) within a 30-mile radius of a location where TB is found in any species. In particular, participation in the DCP program is being offered to private landowners in DMU 452. Consequently, a letter was sent to many hunt clubs and larger landowners in DMU 452 to inform them of this additional opportunity to take deer.

- 110 deer have been taken by 13 landowners.
- Three deer have tested positive for TB, all from DMU 452.
- 25 have requested and were mailed a total of 290 tags.
- 21 signed permits have been received.
- Five have requested more tags.

2008 Bovine TB Laboratory Testing Results for wild deer taken on DCPs

County	Positive	Total Tested
Alcona		28
Alpena	2 (DMU 452)	174
Antrim		33
Charlevoix		40
Cheboygan		10
Clinton		1
Emmet		12
Iosco		41
Kent		65
Montmorency	1 (DMU 452)	78
Ogemaw		15
Oscoda		20
Otsego		5
Presque Isle		45
Shiawassee		35

Grand Total	3 (DMU 452)	602
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CHRONIC WASTING DISEASE

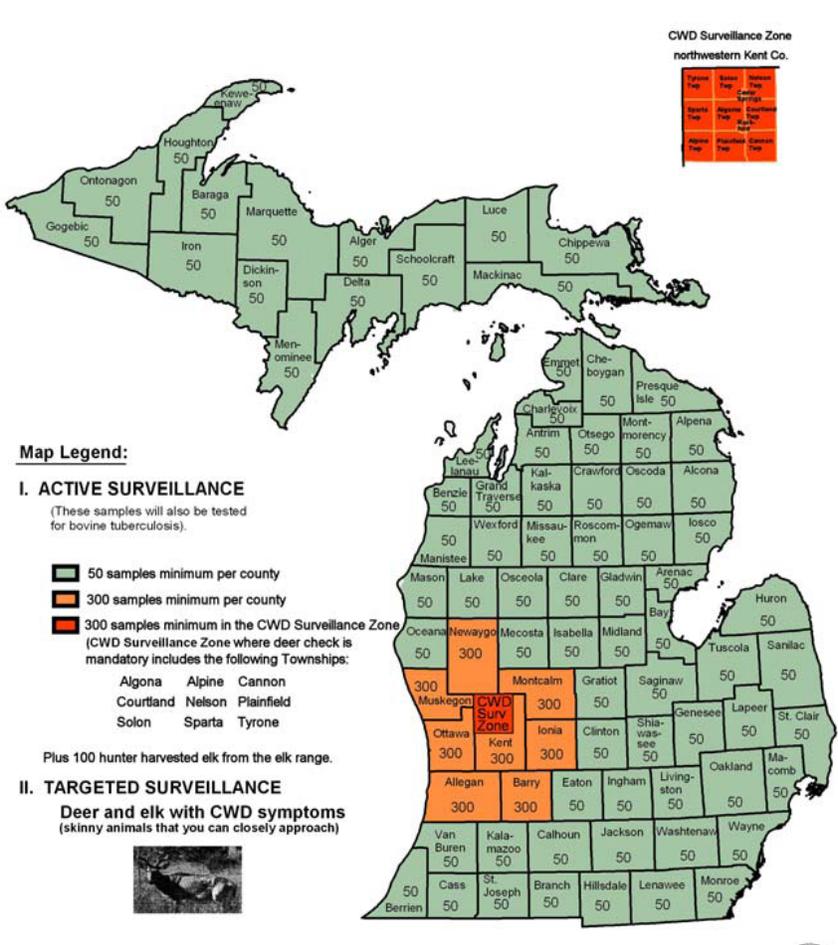
Permits for Private Landowners

Due to finding CWD in a privately-owned captive deer in Kent County, landowners with the CWD surveillance zone (see map below) may obtain DCPs to cull deer on their properties to assist the DNR with testing deer in the area. These permits were made available immediately after the laboratory confirmation.

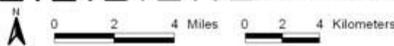
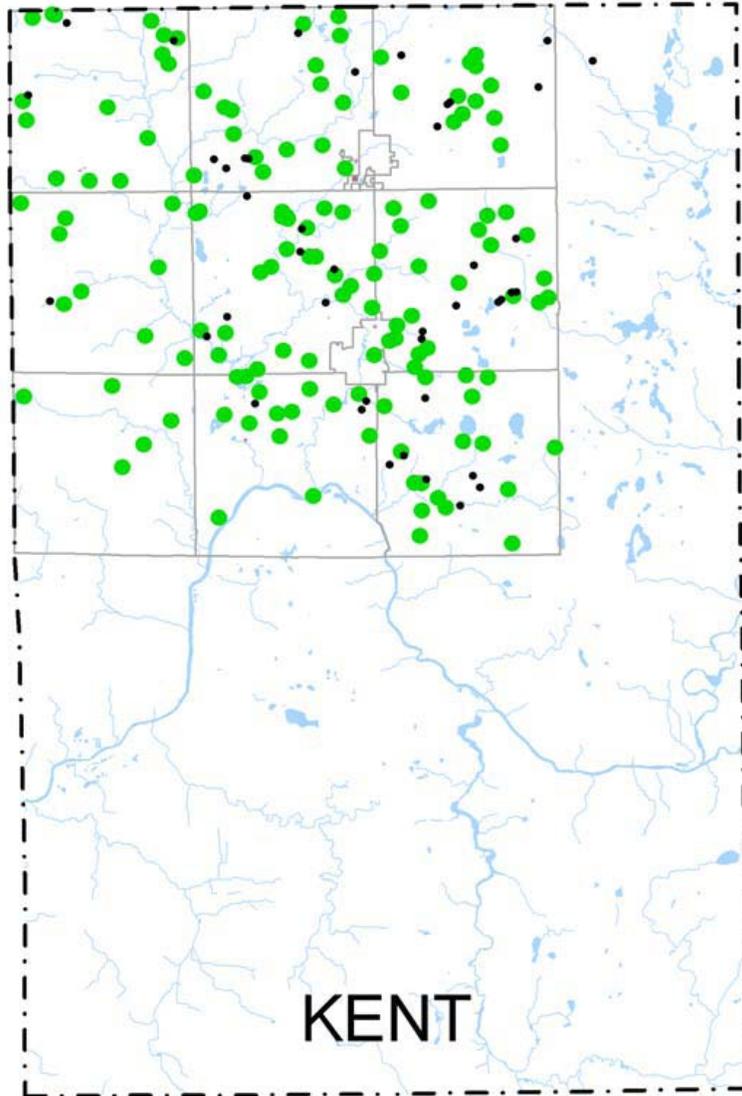
- o 74 deer have been taken by 50 landowners.
- o 235 have requested permits.
- o 226 permits and 1,135 tags have been mailed.
- o 152 signed permits have been received.

**2008 CWD Laboratory Testing Results
for wild deer taken on DCPs**

County	Positive	Total Tested
Kent	0	65



DISEASE CONTROL PERMITS ISSUED AND WHITE-TAILED DEER TESTED FOR CHRONIC WASTING DISEASE AND BOVINE TUBERCULOSIS IN KENT COUNTY, MICHIGAN



LEGEND

- Private Landowner With Signed Permit
- CWD / TB Negative Deer
- CWD Surveillance Zone
- County Line
- Water

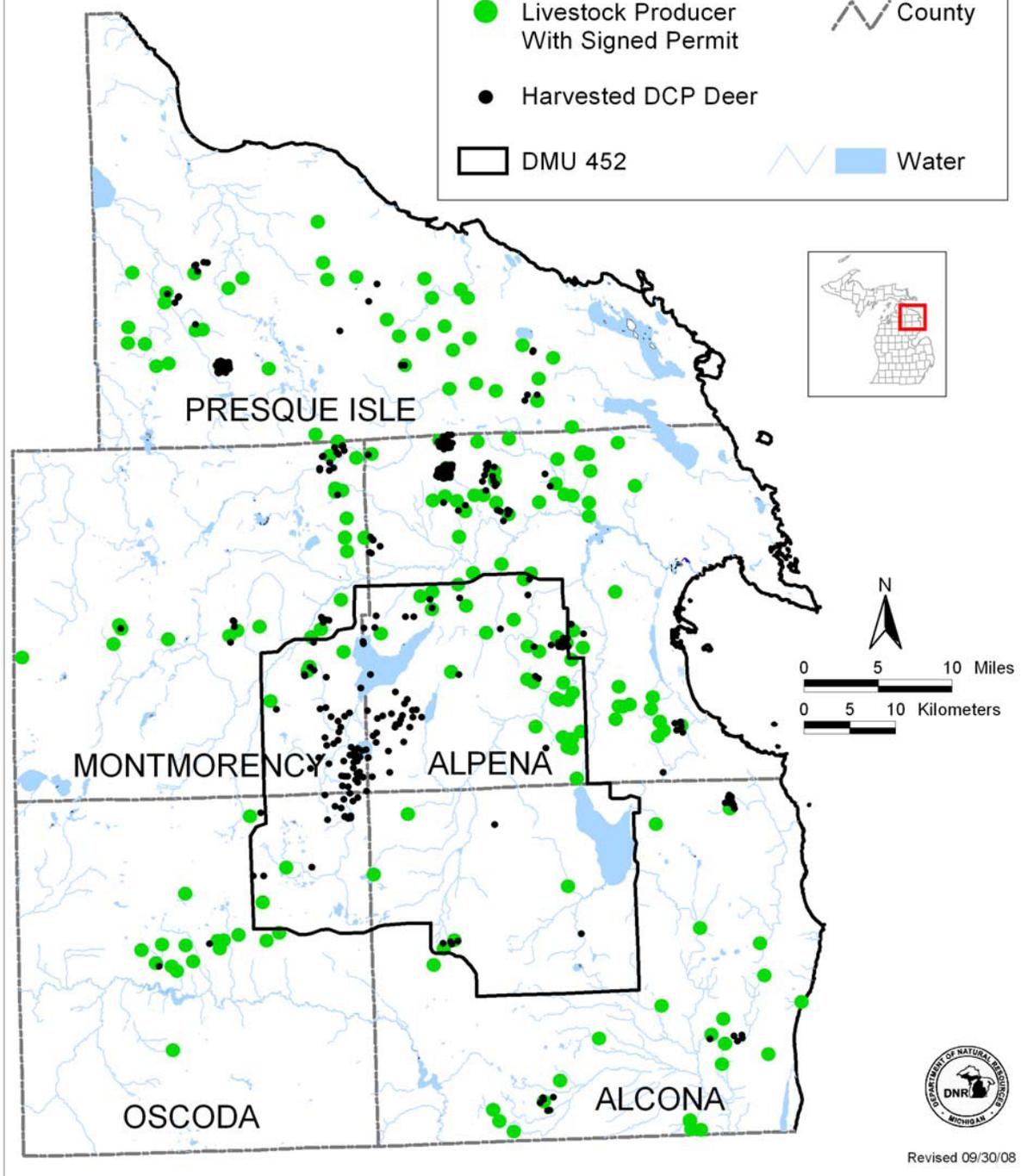


Revised 09/30/08

5 COUNTY DISEASE CONTROL PERMITS (DCP)

LEGEND

- Livestock Producer With Signed Permit
- Harvested DCP Deer
- DMU 452
- County
- Water

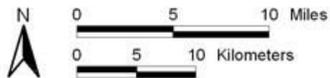
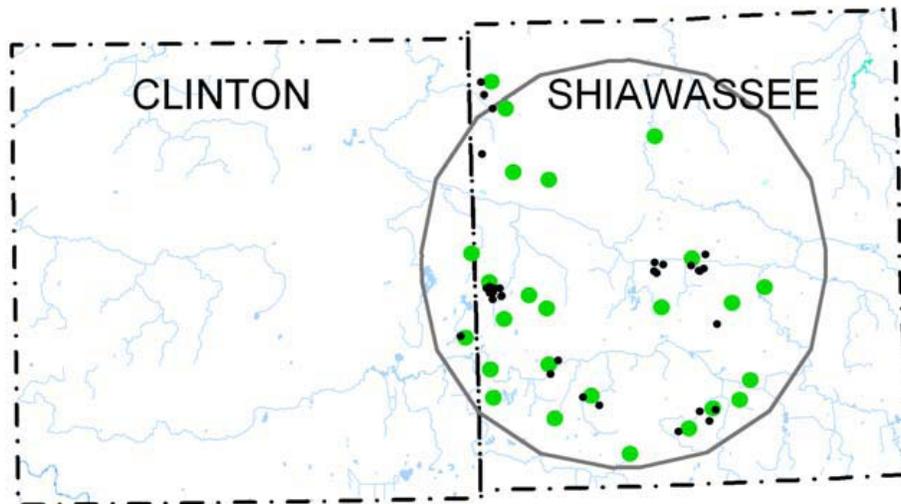


Revised 09/30/08

DISEASE CONTROL PERMITS ISSUED AND WHITE-TAILED DEER TESTED FOR BOVINE TUBERCULOSIS IN SHIAWASSEE COUNTY

LEGEND

- Livestock Producer With Signed Permit
- TB Negative Deer
- 10 Mile Buffer Around 2007 TB Positive Deer
- ▭ County
- ▭ Water



Revised 09/30/08